



Waste Plan Regina - 2021 Update

Date	March 23, 2022
To	Executive Committee
From	Citizen Services
Service Area	Water, Waste & Environment
Item No.	EX22-35

RECOMMENDATION

That Executive Committee receive and file this report.

ISSUE

In 2015, after City of Regina (City) Council received an annual update on Waste Plan Regina (WPR), it was resolved that every year the Executive Committee would receive a report on WPR's annual results and future initiatives. This report summarizes the City's accomplishments in 2021 in relation to the waste hierarchy and provides an outlook of upcoming initiatives. The Waste Plan Regina – 2021 Update is included as Appendix A.

IMPACTS

Environmental Impact

City Council set a goal for the City of achieving net-zero emissions and sourcing of net-zero renewable energy by 2050. In support of this goal, City Council asked Administration to provide energy and greenhouse gas (GHG) implications of recommendations for Council to evaluate the climate impact of its decisions.

The City's waste diversion programs are part of an integrated solid waste management plan for the collection and disposal of waste, which ensures protection of the natural environment by following provincial regulations and best practices.

The landfill generates GHG emissions of 91,360 tonnes of CO₂ equivalent per year. This number includes the approximate 9,439 tonnes of CO₂ equivalent reduction through the Landfill Gas to Energy Facility (gas engine/generator) and flare. The annual landfill GHG emissions are equivalent to the emissions generated by 24,000 vehicles on a yearly basis, which translates into the consumption of 6.5 million litres of gasoline per year.

The gas/engine generator that the City has operated since 2017 uses the methane gas from waste decomposition at the landfill for power generation. The facility has the capacity to generate up to 1MW of power. This renewable energy source contributes to offsetting SaskPower's electricity grid emissions. The facility can produce up to 7.8 million kWh of electricity per year, which is enough to power over 1000 homes. It can also reduce GHG emissions by an estimated 30,000 tonnes per year, or the equivalent of taking 8,000 cars off the road. In 2021, the gas/energy generator produced 1.8 million kWh.

Along with the reductions mentioned above, the expansion of the landfill gas collection system and flare facility replacement is estimated to further reduce GHG emissions by up to 37,720 tonnes. This is equivalent to removing 10,000 vehicles from the road on annual basis, and equivalent to reducing gasoline use by 2.7 million litres per year.

The 2021 Municipal Operations Energy and Emissions Inventory is expected to be complete by mid-2022. Once complete, GHG emissions from solid waste operations and other municipal operations will be reported and published in the updated Municipal Operations Energy and Emissions Inventory.

Additional details on waste reduction and waste diversion accomplishments through various initiatives that are currently in place, along with future initiatives, will be described in subsequent sections of this report.

The Energy & Sustainability Framework (ESF) will include recommendations related to reducing GHG emissions from solid waste, including a landfill gas reduction target. If approved, Administration will ensure that further enhancement of recycling and composting programs, along with a landfill gas reduction targets are taken into consideration and are aligned with the ESF. Actions that improve recycling, composting and landfill gas reduction will contribute to the reduction of energy use and emissions communitywide.

Policy/Strategic Impact

WPR aligns with *Design Regina: The Official Community Plan Bylaw No. 2013-48 (OCP)*. The continued implementation of WPR directly contributes to the OCP priorities, specifically:

Section D4, Goal 4 - Conservation and Environment, "Design infrastructure that conserves resources and minimizes impacts on the environment".

Continued implementation of WPR contributes to achieving the OCP's Community Priorities and alignment with other municipalities by encouraging the City to embrace leading practices for waste management.

OTHER OPTIONS

Not Applicable.

COMMUNICATIONS

Public awareness and education campaigns focused on the City's solid waste management programs and services will continue in 2022. The City will focus education efforts on waste reduction and reuse messaging and will continue to educate residents on proper use of City waste services and the importance of waste diversion. The Waste Plan Regina - 2021 Update will be posted on Regina.ca/waste with key information shared with residents through various communication tactics.

DISCUSSION

Regina's Waste Management Strategy

WPR provides direction for the City's solid waste management programs and services for both residential and non-residential sectors.

The Waste Management Hierarchy has guided development of Regina's long-term waste management plans and other municipal plans across the country. The hierarchy emphasizes source reduction and reuse, followed by recycling and composting, and finally energy recovery from waste, treatment, and disposal (landfilling).

Reduction & Reuse

Regina Residents Generate Lots of Waste

The average Regina resident produces 25 per cent more waste than the average resident in Canada or the United States. The average North American resident produces around 725 kilograms of waste per person per year. This amounts to approximately 48 bags of garbage per household each year. Regina's residents are producing 907 kilograms of waste per person per year. This amounts to approximately 60 bags per household each year.

Reducing the amount of waste produced extends the life of the landfill and aligns with the Government of Saskatchewan's waste reduction goals. The Government of Saskatchewan has set a waste reduction target of 30 per cent by 2030 and 50 per cent by 2040. That would be a reduction of 272 kilograms per person to achieve a 30 per cent reduction.

Encouraging Waste Reduction

The City is continuing to focus education efforts on encouraging waste reduction and reuse which is important when looking at Regina's waste generation.

The City initiated a number of education, outreach and seasonal campaigns to encourage residents to reduce their waste. In-person and virtual events continued in 2021. The City interacted with over 3,500 interactions with residents at public education and outreach events, including information booths and corporate, community and school presentations and virtual events.

The City once again proclaimed Waste Reduction Week October 18 to 22, 2021. During the week, the City offered a virtual trivia night to test residents' knowledge for a chance to win waste reduction prizes and partnered with Saskatchewan Waste Reduction Council to host the second Repair Café. The Repair Café allows residents to bring broken household items to skilled volunteers who repair the item and save it from disposal.

In conjunction with Waste Reduction Week, the City relaunched the Choose to Reduce campaign. The goal of the campaign was to improve public awareness of the importance and benefits of reducing the amount of waste coming into and out of the home.

The City further encouraged reduction by promoting the upcoming *Plastic Checkout Bag Ban Bylaw* which came into effect February 1, 2022 after a delay due to the COVID-19 pandemic. The implementation of the ban is another way to reduce plastic waste entering the landfill and to prevent plastic litter in the community.

The federal government's plan to ban the manufacture, import and sale of six single-use plastic items (checkout bags, cutlery, foodservice ware, ring carriers, stir sticks and straws). The Federal Government's intent is to finalize these regulations and bring the ban into force as early as late 2022. The United Nations recently approved a resolution to address the full life cycle of plastic products and limit the production of plastic. This work aligns with the waste hierarchy to focus on waste reduction.

Recycling and Composting

The City has set a residential diversion target of 65 per cent. This means that of the residential waste generated, the City wants to keep 65 per cent of the waste out of the landfill through diversion. Residential waste diverted from the landfill in 2021 remained at 20 per cent. The residential waste diversion calculation considers all waste generated from households including curbside garbage, recycling and food and yard waste, depot programs (Yard Waste Depot, Household Hazardous Waste Depot, Treecycle, Big Blue Bins), household glass returned to SARCAN, and garbage and recycling dropped off at the landfill.

Food and Yard Waste Service

City-wide implementation of the food and yard waste service will increase the residential diversion rate to help reach Council's target of 65 per cent residential diversion. The City conducted a Food

and Yard Waste Pilot from September 21, 2020 to September 20, 2021, diverting 700 tonnes of food and yard waste from the landfill.

City Council approved the implementation of a city-wide food and yard waste curbside collection service to be implemented in 2023 to all residential properties. The mandatory city-wide service will include:

- Collection of all food scrapes including meat, bones and dairy referred to as a “*scrape the plate*” service, and yard waste.
- Inclusion of compostable bags to increase food capture.
- A 240-litre green cart for food and yard waste collection.
- Weekly food and yard waste collection from April to October and bi-weekly November to March.
- Reduced garbage collection frequency to bi-weekly year-round.
- Multi-family property owners will be required to offer food and yard waste collection for their properties by 2024.

Pilot participants will continue to receive collection service until city-wide roll out. The addition of the green cart showed that pilot residents, on average, were able to divert 51 per cent of the residential waste collected at the curb. Proper waste sorting practices can increase diversion an additional seven per cent which could bring the overall diversion rate to 58 per cent.

Residential Drop off Depots

The City provides drop-off depots for residents that have waste needs above the curbside service level and for materials not accepted in the curbside collection programs. Depot services include the Big Blue Bins for collection of recyclables and the Yard Waste Depot which includes the collection of Christmas trees (Treecycle) and pumpkins. The City also offers five Household Hazardous Waste (HHW) Days per year. Both the HHW Days and Treecycle programs saw growth in the waste tonnages collected. At HHW Days, the City collected 139 tonnes of hazardous waste, 11 per cent more than 2020. Treecycle collected 43 tonnes, a 38 per cent increase from 2020.

CartSmart Automated Pilot

Approximately 11,875 households were visited during the automated CartSmart education program with the use of camera and GPS technology. The camera detects contaminants in the blue cart through imaging. Residents with unacceptable items in their blue cart received an “Oops” mailer to let them know which items were not recyclable.

Over a three-month period, 77 per cent of residents had unacceptable items in their blue cart. There was a 41 per cent improvement rate by the end of the program. The most common non-recyclable items placed in the carts were:

- Stretchy plastics (31 per cent)
- Plastic bags (26.8 per cent)

- Styrofoam (15.2 per cent)

“Good job” mailers were sent to households that showed no contaminants during the pilot. Using the information from the CartSmart program, a Recycle Right campaign was developed to reduce the top contaminants in the blue cart.

In addition to education, the City uses the Waste Wizard tool to help residents determine what can go in their blue cart. Over 37,000 items were searched on Waste Wizard in 2021. The top five searched items in 2021 include styrofoam, glass bottles and jars, exercise equipment, paint cans, and plastic bags.

Non-Residential Waste Diversion

The City expanded its multi-stream waste system for collection of mixed recycling, compost and garbage to all City-operated facilities. Over 6,000 bins were deployed to 73 facilities. Employees and residents now have the option to recycle and compost, which contributes to throwing less in the garbage. City operations is now diverting 42 per cent of its waste with the expansion of the Green Routine, which is four times the amount diverted before the Green Routine.

The diversion rate is lower in public spaces. To increase diversion in public facing City facilities, we need the public’s participation in the program and the City is continuing with education programs to influence behaviors.

To make sorting easy, the City aligned the waste services with the residential waste streams. What goes in your blue and green cart at home can go in the blue and green bin at City facilities.

Energy Recovery

Twenty additional landfill gas wells were installed in 2021, bringing the total number of active wells onsite to 53. These additional wells are used to capture more landfill gas which reduces our GHG emissions and improves run-time of the Landfill Gas to Energy Facility. The landfill generated approximately 91,360 tonnes of CO₂ equivalent in 2021. The landfill gas capture system, which includes the Landfill Gas to Energy Facility and flare, reduced this by approximately 9,439 tonnes.

Treatment & Disposal

The City landfill is projected to have enough space to operate for the next 26 years. In 2021, the total amount of waste landfilled was 162,000 tonnes. This is the lowest volume received at the landfill in 18 years. This decrease can be attributed to waste haulers disposing of material in surrounding landfills. Residential waste disposed remained consistent to previous years.

A Look Ahead

Education Room - Opening in 2022

The Waste Management Centre houses an 800 square foot interactive Education Room which will be opened to the public. The Education Room highlights the importance of waste reduction and water preservation.

Permanent Household Hazardous Waste Depot - In 2022

The City will begin exploring the development of a permanent HHW depot to respond to increasing demand.

Curbside Waste Services Funding Policy - In 2022

With the introduction of a green cart (food and yard waste collection service) the City will re-examine solid waste funding policies for curbside waste services. Options consist of full user fee, a full property tax-based system or a combination in relation to encouraging waste reduction and diversion behaviours.

Industrial, Commercial & Institutional Sector Regulations - 2022 - 2024

Bylaw amendments that regulate the Industrial, Commercial & Institutional (IC&I) sector are expected to go to Council for a decision in 2022/23 with an anticipated implementation date in 2024. Waste management policies could include mandated recycling, composting, and/landfill bans on materials that are easily divertible (e.g. paper and cardboard).

Construction & Demolition Sector Regulations - 2024 - 2026

Establishing waste management policies for construction and demolition sectors to divert material from the landfill will be explored and could include mandated recycling, landfill bans or surcharges for divertible materials.

Landfill Diversion - 2025 - 2028

The City is looking at offering more opportunities to divert problematic waste materials by establishing a diversion station at the landfill to accept items like tires, construction material (untreated wood and gypsum), mattresses, etc.

DECISION HISTORY

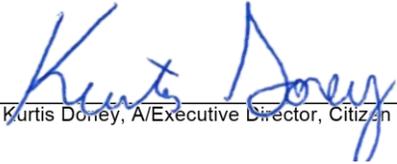
In 2011, City Council approved the Waste Plan Regina Implementation Plan (CR10-147), which recommended implementing the Enhanced Residential Service Level Option for the residential sector. It set a diversion goal of 65 per cent by 2020. City Council also adopted the Extended Services Level for the non-residential sectors.

In 2015, Administration responded to a City Council motion (Motion 14-3) with a report that included an annual update on Waste Plan Regina initiatives (PWI15-2). It was resolved that, every year, the Public Works & Infrastructure Committee would receive a report on WPR's annual initiatives, results, and future plans.

The recommendation in this report is within the delegated authority of the Executive Committee.

Respectfully submitted,

Respectfully submitted,



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3/1/2022



Kim Ohra, Executive Director, Citizen Services

3/10/2022

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ATTACHMENTS

Appendix A - Waste Plan Regina 2021 Update